EDMONTON

Cover: Emilia Di Blasio
"I would like to say, 'Don't give up hope.' Sometimes... your illness can be turned around and you can recover. That happened to me..."

The Alberta Cancer Board represents a province-wide team of physicians, nurses, research scientists, technicians, administrators and support staff working to prevent, diagnose, treat and understand cancer.

In this report, cancer patients, care providers and researchers tell the story of breast cancer.

Breast cancer is a special challenge. Yet, advances are being made on all fronts, with new prevention and educational programs, new strategies for diagnosis and treatment and ongoing research to better comprehend the causes, cures and care of this disease.

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Chairman's Letter

As Chairman of the Alberta Cancer Board, I am proud to present the 1988-89 annual report. The Alberta Cancer Board's mandate to provide comprehensive cancer care involves the Board in a wide range of cancer programs, from public education, research and prevention to the treatment of all cancers, from early to advanced.

This report, which takes a special look at the continuum of care offered to breast cancer patients and their families, reflects the Board's commitment to achieving this mandate. Throughout the Board's operations, staff are committed to providing state-of-the-art, world-class programs that address the needs of the whole individual, helping the patient and family cope with the physical and psychosocial aspects of the disease.

Arthur D. Davis
Chairman
Alberta Cancer Board

President's Report

The 1988-89 fiscal year was a very challenging one for the Alberta Cancer Board. Like other cancer institutions throughout Canada, the United States and Western Europe, the Board is struggling to balance patients' needs and demands against diminishing resources.

The "Cancer Care Needs Study," a 1987 Alberta study, predicted a 58 per cent patient increase in 10 years. By the year 2000, patient needs will have long outstripped existing cancer care facilities. At the same time, the cost of delivering cancer services is rapidly escalating. Cancer research is a fast paced medical field with new therapies and treatment protocols appearing annually, sometimes even quarterly. As the quality of cancer programs improves, treatment becomes more complex and costly.

In Canada, we are struggling with a shortage of highly qualified manpower, a shortage so severe it forced an Ontario hospital not to accept any cancer patients for a few months in 1989. In many ways, Alberta is in a better situation than other North American centres, but we are nevertheless experiencing a fairly sizeable crisis. For the Alberta Cancer Board, it has meant that the Board has no alternative but to table a deficit for 1988-89.

The Board and the Government of Alberta are already taking responsive steps. In 1987-88, the government authorized the expansion of the Cross Cancer Institute in Edmonton. By the mid-1990s, Calgary's Tom Baker Cancer Centre will have outgrown its present facilities and will require a similar expansion. Throughout the next decade, meeting the cancer challenge will be a constant priority for the Board.

Alberta Cancer Board staff continue to perform admirably, despite the increasing patient numbers with their increasing expectations. Advances in cancer care have meant improved prognoses for some patients and better survival rates. Cancer patients demand state-of-the-art, quality care. They expect to be among the ones who will do well. Their demands and expectations cannot be viewed as negative.

Quality care includes public education and prevention programs, research, advanced diagnosis and treatment—a continuum of care where researchers, technicians, oncology nurses, physicians, counsellors and administrators respond as a team to the needs of the whole person and his or her family. The story of breast cancer illustrates this continuum and is therefore an appropriate choice for the 1988-89 report. Breast cancer is a disease of the entire family. It affects the patient, the husband, the children and the parents. More than any other cancer, it demands a continuum of care, and in all areas, from prevention and early diagnosis to palliative and psychosocial care, the Board has been making major advances.

In summary, we believe the challenges experienced in 1988-89 will be with us for years to come, but with a dedicated staff and a concerned and responsive Board, we shall continue to meet our patients' needs, providing world-class care that includes more and more survivors among cancer patients.

Dr. Jean-Michel Turc
President
Alberta Cancer Board

Cross Cancer Institute

The Cross Cancer Institute, located in Edmonton, is the comprehensive cancer centre of northern Alberta, with a mandate to provide cancer-related services to this region. The Institute is assisted in its activities by two associate cancer centres (the Central Alberta Cancer Centre, located in Red Deer, and the Grande Prairie Cancer Centre) and by Peace River and Fort McMurray Clinics.

As a tertiary care referral centre, the Cross Cancer Institute provides specialized cancer treatment to patients from northern Alberta. As a cancer research facility, the Institute houses internationally acclaimed laboratory and clinical research programs. Formally affiliated with the University of Alberta, the Institute is the site of the University's training programs in medical oncology and radiation oncology and participates in the training of residents in various specialties, of graduate students in medical and natural sciences, and of undergraduate medical students. The Institute has its own schools of radiation oncology technology and nuclear medicine technology, and assists in the training of students of nursing and other health care disciplines.

This year, the Alberta Cancer Board's report focuses on cancer of the breast. This very common disease constitutes a significant portion of the workload of the Cross Cancer Institute. A review of our efforts in the area of breast cancer gives a good insight into the scope of our programs in patient care, research, education and prevention. Notable among our research endeavors in this disease are our attempts to utilize the latest advances in molecular biology to improve the clinical management of patients.

I hope our commitment to excellence in clinical service, research and teaching, in an atmosphere of compassion and respect for human dignity, will be apparent in the vignettes presented in this report. Above all, we are constantly striving to improve the prospects for persons with this and other malignant disorders.

During the past year, the Alberta Cancer Board continued the planning of a major expansion of the Cross Cancer Institute, approved by government in 1988. This timely development will allow the Institute to respond to the needs of the increasing number of persons with cancer, as our population grows and ages. As we plan for expansion of our programs, we reaffirm our intention to be in the forefront of advances in the field of cancer medicine, for the benefit of the people of northern Alberta.

Dr. Tony Fields
Director
Cross Cancer Institute

Tom Baker Cancer Centre

The 1988-89 fiscal year has been a year of renewed optimism for the Southern Alberta Cancer Program, although patient loads continue to increase as predicted and new therapies and advances continue to have an impact on the resources and capabilities of the Tom Baker Cancer Centre and its outreach clinics. Nevertheless, outstanding progress has been made in the development of the Southern Alberta Cancer Program on a number of fronts.

Project Alpha succeeded in raising funds from the southern Alberta community to finish and equip a floor for cancer research in the Heritage Medical Research Building at the Faculty of Medicine, University of Calgary. Through the creation of this Cancer Research Centre, a partnership between the Tom Baker Cancer Centre and the University of Calgary's Faculty of Medicine has evolved to allow for the major development of cancer research on the Foothills medical site. This closes a major gap between the service and research capacities of the Tom Baker Cancer Centre. A successful service program requires a significant research base to stay on the leading edge and to attract staff of the highest quality. This successful fundraising project has alerted southern Albertans to the important role the cancer control program plays in the health of its citizens.

There has been considerable progress in planning for the relocation of the pediatric oncology program to the Alberta Children's Hospital. The resulting consolidation of inpatient and outpatient components of this important program will provide significant improvements in patient care.

With the advent of techniques using unrelated donors as well as the international transplant registry, the bone marrow transplantation program in southern Alberta is experiencing a major increase in patient load. Indications for the clinical use of marrow transplants are increasing and there are more outside referrals. Currently, Calgary is the only centre doing allogeneic marrow transplants in the province. As the cancer control program in southern Alberta develops, the particular role played by the Tom Baker Cancer Centre becomes increasingly tertiary.

Concurrent outreach programs must evolve so patients have access to the appropriate level of care at an acceptable standard, wherever they enter the system. We are improving coordination of various cancer services as well as the agencies which deliver them and developing standards through the use of protocols, and quality assurance methods.

We continue to predict an increase in workload through the millennium of 50 per cent or more. A major portion of this comes from the shifting structure of the population as the "baby boomers" begin to move into the age range at most risk for development of cancer. Planning for programs and the necessary expansion of facilities to accommodate this coming crisis are underway.

I wish to express my thanks to the provincial administration of the Alberta Cancer Board and to the Alberta Cancer Board itself for their strong support of the Southern Alberta Cancer Program. The Tom Baker Cancer Centre abbreviates to TBCC. For our staff and patients those letters also mean "The Best Cancer Care." The excellence and dedication of our staff make-this possible.

Dr. L. Martin Jerry
Director
Tom Baker Cancer Centre

Breast cancer is not new. Doctors have known about this form of cancer for several centuries. Still, there are many unanswered questions. Who will develop breast cancer? Why? When? What is the best way to treat it? How can we diagnose it earlier? Or better yet, can we prevent it?

The Story of Breast Cancer

Although breast cancer has always been a very common form of cancer in women, there has been a steady and considerable increase in its frequency during the last 30 years in Alberta. *(See figure 1)* Today, it is the most common form of cancer in women, accounting for about 30 per cent of all cancer in women. One out of every 11 women will develop breast cancer in their lifetime.

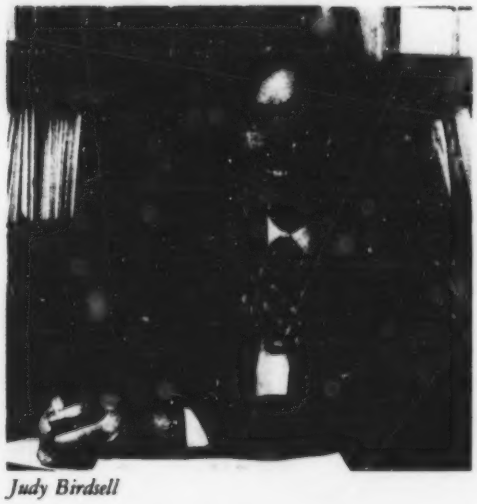
Who will develop breast cancer?

Breast cancer seems linked to the hormonal changes that occur with the menstrual cycle, pregnancy and menopause. Age at menarche, age at menopause, age when a woman's first child is born and number of pregnancies, all influence whether or not breast cancer may develop.

Family history is also a factor. Between 10 and 20 per cent of women diagnosed with breast cancer have a close relative with the disease. Another factor is age: most breast cancers occur after menopause when women are over 50. Age-distribution graphs show a plateau around age 50, the average age when most women experience menopause. This pattern may be showing us that we are actually talking about two separate cancers: a pre-menopausal form of breast cancer and a post-menopausal form.

Can we prevent breast cancer?

Diet and lifestyle (environmental factors) can increase a woman's breast cancer risk. Epidemiologists are suggesting that a high-fat diet may contribute to the development of breast cancer and that overweight women and women who consume even moderate amounts of alcohol are more at risk.



Judy Birdsell

The average woman's diet contains about 40 per cent fat and the Steve Fonyo Cancer Prevention Program recommends women eat less fat. "We recommend reducing your fat intake to 30 per cent of your calories," says Judy Birdsell, coordinator of the Steve Fonyo Program.

Ideally, says Judy, women's diets would be about 20 per cent fat: "It's not that reducing fat consumption even further wouldn't be better, but we didn't know what was reasonable to expect. How hard or easy is it to reduce the fat in your diet?"

The Steve Fonyo Program developed several activities to help individuals change their diets. In Red Deer and Lethbridge, risk assessment questionnaires were distributed door to door. A respondent, who indicated she had a high-fat diet, would receive an individualized letter with an appropriate diet message and an invitation to participate in activities offered in conjunction with health units in Red Deer, Medicine Hat and Lethbridge. She would be invited to phone for a self-help kit, to register for classes or come in for one-to-one counselling with the nurse coordinating the cancer prevention program in those health units.

"Statistically, I was the last person in the world. I was the wrong age. I was only 42 when I was diagnosed. I had my children young. I had nursed my kids. I have never taken birth control pills in my life. There is no history of breast cancer in my family. My mother had seven sisters, and there has never been a lump in my family."

Marg Pullisiy recalling her diagnosis with breast cancer

Dr. Adalei Starreveld, director of Radiotherapy at the Cross Cancer Institute, sees cancer in general as a disease of the so-called developed world. "It is easy to blame other people or other forces—to blame the environment. But most important is what we decide to take from our environment and put into our bodies. It is the type and amount of food, the cigarettes, the liquor we drink—all those things."

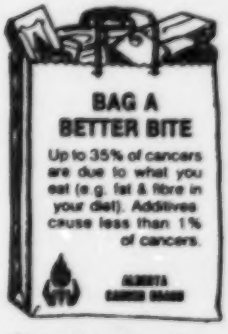
Breast cancer is certainly more common in the industrialized countries (Western Europe and North America) than in the Third World. The one exception is Japan. Although a highly industrialized country, Japan's incidence of breast cancer is rather low. Japanese women living in the United States, however, have almost as high an incidence of breast cancer as American women, suggesting breast cancer develops because of environmental rather than genetic factors.

**Dr. Adalei Starreveld,
Director of Radiotherapy,
Cross Cancer Institute**

In Medicine Hat and Lethbridge, during Nutrition Month, a diet newsletter, designed to make people aware of the level of fat in their diets, was distributed in restaurants. Lethbridge also developed a series of radio and television announcements to increase awareness of the relationship between diet and cancer.

Another project is "Bag a Better Bite." The Bag-a-Better-Bite logo is presented together with a diet message. Approximately 60 diet messages have been developed. Bag-a-Better-Bite messages were printed in newspapers, as part of the grocery stores' display ads.

"We also had a Sherlock Holmes-type logo," says Judy. "It was a promotion where members of a Steve Fonyo sub-committee would act the sleuth. They would go into a grocery store on a Saturday and check people's shopping carts. They would give out coloring sheets for the kids and try to have some dialogue with the customers. In some cases, the grocery stores got involved. The coloring sheets had to do with diet and cancer, and one store sponsored a coloring contest and gave away a bicycle to the child whose entry was drawn."

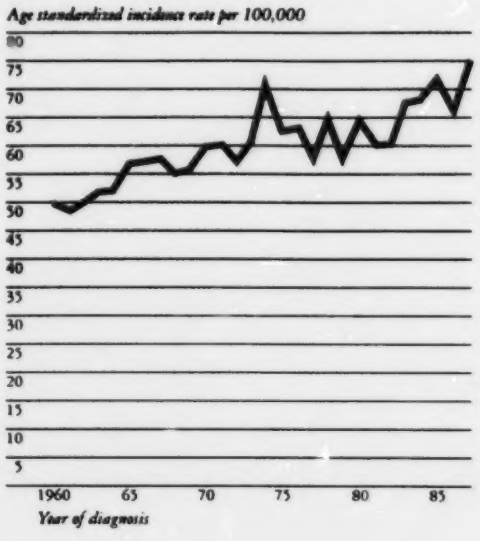


Bag-a-Better-Bite diet messages appeared in newspaper ads.

Figure 1

ANNUAL AGE STANDARDIZED INCIDENCE RATE OF BREAST CANCER PER 100,000 IN ALBERTA

During the last 30 years, there has been a steady increase in the incidence of breast cancer in Alberta.



Diagnosing Breast Cancer

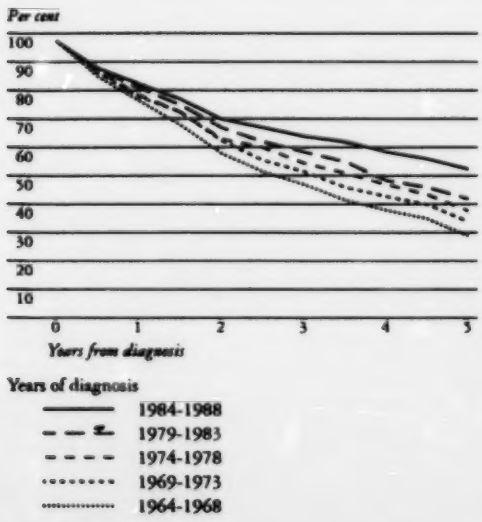
Finding the disease

"If the world were perfect," says Dr. Bill Castor, director of the Department of Radiology at the Cross Cancer Institute, "and we diagnosed all breast cancers when they were very small—less than five millimetres in diameter—we would make a significant impact on the mortality rate of breast cancer."

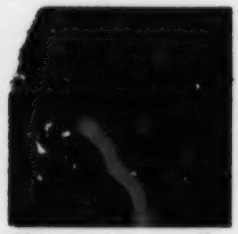
The survival rate for breast cancer has improved steadily over the last 30 years *(See figure 2)*. Today, the five-year survival rate is 65 per cent: six or seven of 10 patients will be alive five years after diagnosis. This survival rate is high compared to some other cancers. With lung cancer, for example, the survival rate is only 10 per cent: one out of 10 patients lives five years.

Sixty-five per cent, however, is an average: the survival rate for localized breast cancer, diagnosed before the cancer has spread, is five times greater than for advanced breast cancer which may have spread to the lymph nodes, bone and other organs. It means many more women would survive, if we could diagnose all breast cancers early.

Figure 2
SURVIVAL FROM BREAST CANCER BY YEAR OF DIAGNOSIS IN ALBERTA
The survival rate for breast cancer has improved steadily over the last 30 years.



The mammogram showed a highlighted area. A biopsy revealed it was cancerous.



The tumor was surgically removed, and the tumor bed treated with radiation, using radiation implants.

Methods of Diagnosis

There are three basic techniques for detecting breast cancer: Breast Self Examination (BSE), physical examination by a health professional and mammography, which uses low-dose x-rays.

Most breast cancer tumors are discovered by women themselves, either accidentally or through BSE. That may change as mammography or screening becomes more common. Studies conducted in the U.S., the Netherlands, Sweden and England have invariably shown that early diagnosis (screening) and treatment can reduce the mortality rate by 30 to 50 per cent.

Mammography can detect tumors less than one centimetre in diameter—tumors so small they are mere shadows on the x-ray. Tumors this small are rarely detected during a physical examination.

Looking for genetic clues

The majority of women with localized breast cancer survive. Their cancer is treated and they never relapse. "The problem is," says Dr. Malcolm Paterson, a research scientist at the Cross Cancer Institute, "about 15 per cent have a more serious form of the disease and may relapse in about a year or two. We have no way of picking those women out—no way of distinguishing that 15 per cent from the 85 per cent group."

About two years ago, Dr. Malcolm Paterson came across an article in *Science*,

"I had these lumps in my breast. I had lumps all my life, so I never thought anything about them—but one of them was growing. I was 28 years old. I was a single mom. I didn't really have a family doctor. I found a physician at the Foothills Hospital who said, 'Let's take it out.'

"Of course, he wasn't expecting anything and neither was I. I believed that breast cancer was something you got when you were 50 or 60. If you ask my family if anyone has had breast cancer, they say, 'Oh, no, we don't think so.' Medical records back in the 1920s, '30s and '40s—there is no such thing! But who knows. My great grandmother on my mother's side apparently had both her breasts removed. She lived to be 99."

Ten years ago Emilia Di Biase learned she had breast cancer

"I have talked to a lot of women and they say, 'Oh, doesn't a mammogram hurt?' I say, 'Of course it hurts— for a couple of minutes, but a mastectomy hurts a lot more.' And if ever, ever I could get a message to people, it would have to be, 'PLEASE GET MAMMOGRAMS DONE. PLEASE.' Because it is so easy. It's so easy to get it done and I am living proof. If I hadn't gone back at the end of the three months after they had detected the first spot, if I had left it for another year, God knows where it would have gotten to."

Marg Pullishy stressing the importance of early diagnosis

where Dr. Dennis Slamon, from the Department of Pathology at the University of California, Los Angeles, demonstrated that there is something unique about a high number of breast cancer patients who relapse. About 20 per cent have too many copies of a gene known as c-erbB-2.

"I phoned Dennis," says Dr. Malcolm Paterson, "and he was up here within 24 hours." Through the Northern Alberta Breast Registry, established in 1976 by Drs. Patricia Burns, Alan Lees and Michael Grace, the Alberta Cancer Board has collected data on breast cancer patients in northern Alberta since 1971. That data base attracted Dr. Slamon.

"The breast unit," adds Dr. Malcolm Paterson, "had the foresight to set up the registry, collect data on each patient, follow the course of the disease in these patients and ensure that the tumor material was preserved in paraffin blocks. Tumors from all these patients are stored in various hospitals in northern Alberta."

Tumor material preserved in paraffin blocks.

A research team, led by Drs. Sandy Paterson, Alan Lees, Malcolm Paterson and Dennis Slamon, examined the data and tumors of patients who had relapsed within five years and compared them with tumors from patients who had been cured. The studies confirmed Dr. Slamon's original hypothesis: 20 per cent of women who relapse have too many copies of the gene c-erbB-2.

Dr. Malcolm Paterson: "It is a very powerful marker of early relapse, and I am sure my clinical colleagues will tell you if a patient presents with a tumor having c-erbB-2 amplified, it is a very aggressive form of breast cancer and I am sure they would recommend aggressive chemotherapy as follow-up."

Dr. Malcolm Paterson is now looking for more genetic clues. If 20 per cent of those who relapse have too many copies of

Dr. Malcolm Paterson, Dr. Alan Lees, Dr. Sandy Paterson

c-erbB-2, what other genetic markers could be identified? Eventually, speculates Dr. Malcolm Paterson, "one battery of tests, genetic marker tests, could separate the high-risk group from the remaining patients, and that will be beautiful because we could identify those who would benefit from aggressive chemotherapy and, equally important for a women who is negative in all those tests, her physician could say, 'I have very good news for you. It looks like you are cured of your disease.' "

Improving methods of biopsy

When a tumor is discovered, some tissue is removed and examined, in other words, biopsied. The tissue is usually surgically removed, but there are new up-to-date methods which can reduce unnecessary surgery. These include fine needle aspirations and the Stereotex.

With a fine needle aspiration, the needle is inserted into the breast tissue and sample cells removed and biopsied. The Stereotex, introduced to the Cross Cancer Institute by Dr. Castor, allows oncologists to examine very small shadows that appear on mammograms. The Stereotex is a computerized needle. The computer guides the radiologist to the abnormal tissue, making it possible to take a biopsy of tissue areas less than one centimetre in diameter.

Dr. Peter Geggie

In Alberta, the majority of women with breast cancer are referred to breast clinics at the Cross Cancer Institute and the Tom Baker Cancer Centre.

Deciding on the treatment plan

"What a cancer centre has to offer patients with breast cancer," says Dr. Peter Geggie at the Tom Baker Cancer Centre, "is obviously chemotherapy and radiation, but also quality of life. We are here to talk about the disease, treat it and organize follow-up."

Patients who come to the breast clinics meet with a medical team which includes a surgeon, a radiotherapist and a medical oncologist. The team provides as much information as possible, describing treatment options and giving the patient the tools to help her decide on her treatment.

Mastectomy versus localized surgery

For breast cancer, the traditional method of treatment is mastectomy, the surgical removal of the breast. Near the end of the 19th century, a man named Halstead proposed a radical mastectomy, which included the removal of the breast and the chest wall muscles. That particular approach held sway into the 1960s and it was the method of treatment most recognized in the community.

Radical mastectomy was a deforming operation, and around 1970 it was replaced by a more simple mastectomy, where only the breast itself was removed. More recently, with localized breast cancer, surgeons recommended lumpectomies or just removing the lump itself.

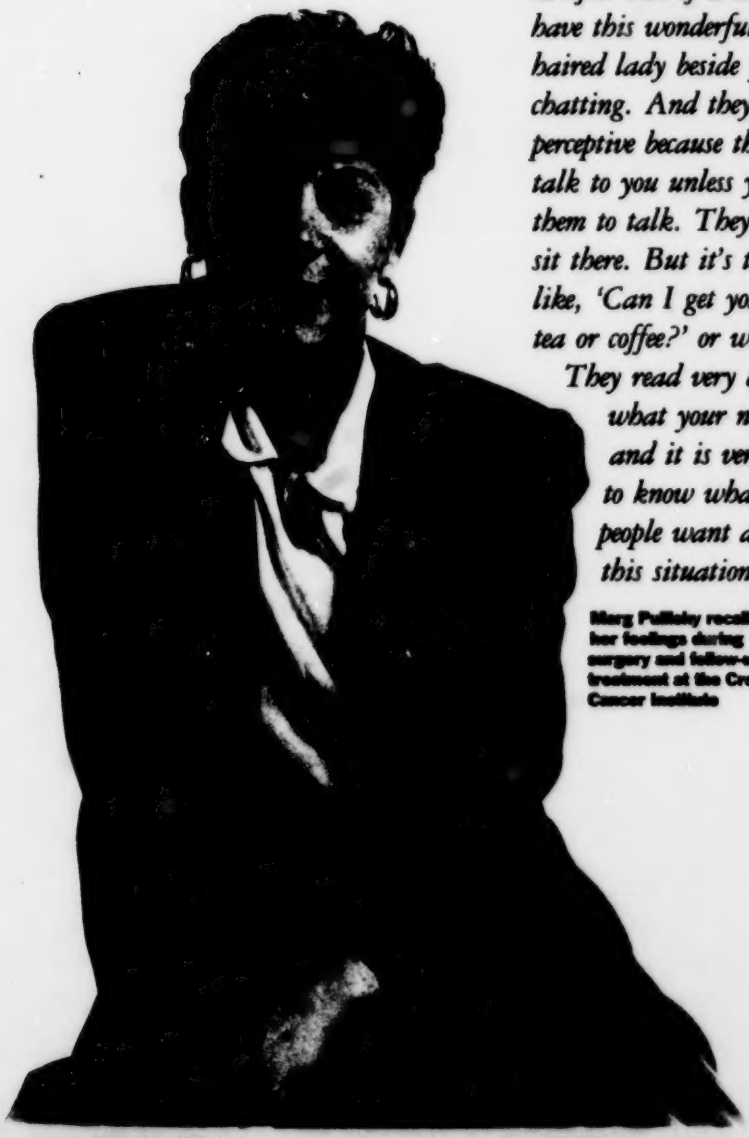
If a tumor is large and the cancer invasive, a mastectomy may still be the first treatment of choice. But today, 40 per cent of women manage to keep both breasts. Dr. Geggie says about 60 per cent of patients at the Tom Baker Cancer Centre have mastectomies. "You have to work it out on an individual basis, because some women are really more comfortable with having the breast removed, even if the tumor is small enough to be removed by lumpectomy."

Adds Dr. Geggie, "One has to recognize a lumpectomy is a cancer operation. You have to remove all the tumor. But to be successful, it also has to be a cosmetic operation. If you have a relatively large tumor in a relatively small breast, from a cosmetic point of view, what you are left with may only be as good as a mastectomy."

"I was so angry and the anger lasted so long it started to frighten me. It lasted until the day I went into surgery which was about two and a half weeks from the time they found the lump.

"You are so fragmented. You don't know what you are thinking or feeling. I found I really needed to be touched. I needed people to touch me often. It was like I was taking some of their strength because I was feeling so fragile. The volunteers are terrific. All of a sudden you have this wonderful grey-haired lady beside you chatting. And they are very perceptive because they don't talk to you unless you want them to talk. They might just sit there. But it's things like, 'Can I get you a cup of tea or coffee?' or whatever.

They read very quickly what your needs are and it is very difficult to know what other people want and need in this situation."



Marg Pulsley recalling her feelings during surgery and follow-up treatment at the Cross Cancer Institute

Rosealeen Mitchell, Anita Hades

The Day Care Unit at the Tom Baker Cancer Centre is the active chemotherapy treatment area and it is here breast cancer patients receive their prescribed drug therapy.

"Teaching is a very important part of our nursing role," says Day Care nurse Anita Hades, explaining that, before beginning treatment, patients attend an interview, often one and a half hours long. It is a stressful time when patients receive a lot of information about cancer and its treatment.

"Patients are encouraged to bring a relative or friend with them, not just for company and support, but also to help reinforce the information presented, once they return home. Women undergoing chemotherapy for their breast cancer are encouraged to maintain as normal a lifestyle as possible. We are here to help them do that.

"Most patients have had little previous experience with or knowledge of chemotherapy. They may have read something that does not actually apply to their situation. We discuss chemotherapy in general, but more importantly, we discuss their specific treatment—the action and the potential side-effects of the drugs.

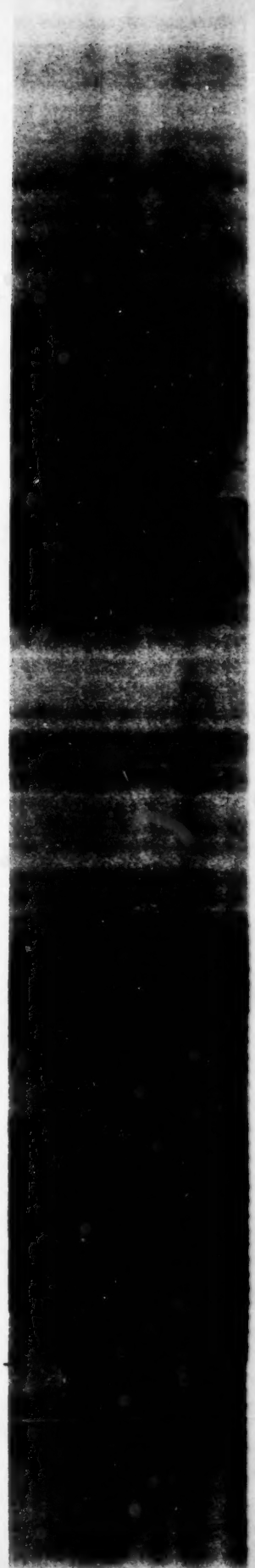
We try to dispel the myths and preconceived ideas people may have.

"We remind them that chemotherapy is a broad heading for a group of drugs and that there are over 50 chemotherapy agents available to us. These drugs are given in different combinations and in varying doses for different diseases. Therefore the potential side-effects and the severity of these side-effects vary greatly from one individual to another. Our patients are encouraged to watch a short chemotherapy video and are given a booklet and information leaflets about their drugs.

"The majority of patients with localized breast cancer will receive a combination of drugs, that is generally well-tolerated. The treatment for advanced breast cancer is more aggressive, and the possibility of increased side-effects, such as nausea, vomiting and hair loss, is greater. Patients who are aware of the potential side-effects are not as alarmed if they occur. Side-effects are also reduced when patients have been informed of measures to control or eliminate them."

Most breast cancer chemotherapy is given over a period of approximately six months. "We get to know our patients very well. We are often their most direct contact to the Cancer Centre and we try to be available to answer questions and offer support. As part of a multidisciplinary team, we can involve other disciplines, such as psychosocial, dietary, community nursing, physiotherapy and patient support and self-help groups, when necessary."

Anita Hades, Day Care nurse, Tom Baker Cancer Centre



"I would like to say to people, 'Don't give up hope.' Sometimes when the end seems to have arrived, your illness can be turned around and you can recover. That happened to me.

"You have to take control of your illness and your life and make sure your doctor is willing to listen. I am fortunate because my doctor listens to what I have to say.

"I have had cancer for 10 years. For eight out of those 10 years I was totally functional. I didn't even take days off for nausea. But two years ago, I was really struck down. I became so ill I was inches away from death.

"The cancer spread to my lymph nodes. All of a sudden I discovered huge lumps in my neck and in my armpits. In April, I ended up in the hospital. I had lost tons of weight and I couldn't breathe. The cancer had spread to my lungs and they felt like they were full of cement. My doctor called my family. I was practically dead.

"Dr. Geggie tried some chemotherapy and after six months, I had a very, very slight recovery. During the '88 Olympics, I started to deteriorate again. It was the first time I faced the fact that I was "really" going to die. Dr. Geggie agreed to radiate my ovaries to stop the cycle and the flow of estrogen because I felt there was a link between my menstrual cycle and the growth of the cancer.

"I was in a state where I literally had to be lifted onto the radiation table. I couldn't walk. I could hardly move but most of all, I could barely breathe. I couldn't do anything for myself. The radiation took place in July and by September I was able to go and visit my brother and his family in Port Coquitlam. I was in a wheelchair but I had enough energy to travel. The treatment had worked!

"I have been recovering ever since. Even though I still have some enlarged lymph nodes, I believe I am completely cured. In a few months, I will start working for my company again."

Emilia Di Biasio describing her struggle with breast cancer

Nancy Grainger, outpatient nursing supervisor, Tom Baker Cancer Centre. Breast clinics are held Monday and Thursday morning at the Tom Baker Cancer Centre. "On a Monday morning," says Nancy, "we will probably see 70 follow-up patients and anywhere from five to 10 new patients."

Improving radiotherapy

Many patients now choose to have a lumpectomy combined with radiotherapy. The patient receives localized surgery, then radiation treatment to destroy cancer cells that may have spread beyond the actual tumor.

Radiotherapy is constantly becoming more sophisticated. With radiation implants, hollow steel needles are inserted into the breast where the lump had been situated. The needles ensure the radioactive sources travel directly to the tumor bed. This technique spares most of the healthy tissue from the effects of radiation.

New ways to use radiotherapy and chemotherapy

The Tom Baker Cancer Centre and the Cross Cancer Institute are currently studying whether radiotherapy and chemotherapy can be used to shrink a tumor prior to surgery.

"If you have a large tumor and use chemotherapy to shrink it, then radiate it," says Dr. Temple, director of the Department of Surgery at the Tom Baker Cancer Centre, "the amount of surgery required to pick up the residual tumor can be very little. A definite advantage is you can save breasts where you couldn't before. In many cases, there is no tumor left."

Chemotherapy prior to surgery may also help patients with advanced breast cancers. Adds Dr. Temple, "We are trying to improve the cure rate in advanced breast tumors by sending patients to chemotherapy before they have surgery."

The Alberta Cancer Board works to improve the quality of patients' lives. Since most treatments are delivered through Day Care or outpatient units, patients spend very little time in hospital. And with successful chemotherapy and hormone treatment, many live active, productive, and pain-free lives. *(See figure 3)*

Advanced cancers

Some advanced breast cancers do not respond to radiotherapy or chemotherapy. Dr. Rene LaFreniere, a cancer surgeon with the Tom Baker Cancer Centre, works closely with Dr. Geggie. "Dr. Geggie talks to me about very difficult cases. 'What do we do now?' They have failed radiation, failed chemotherapy or become resistant to chemotherapy and the tumor has grown from the breast to the chest wall."

Dr. LaFreniere explains that surgery can provide some palliative effects, reducing discomfort and pain. "Many times these tumors involve a lot of muscle or the breast bone. We have cases where we remove the breast and the muscle and the ribs and work with plastic surgery to reconstruct. It is mostly palliative. I try to provide some palliation and improve quality of life. It is important we work together because surgery alone takes care of the problem for about a month. What Dr. Geggie does is put the patient back on more therapy and instead of dealing with massive tumor we are now dealing with just microscopic tumor."

Laurie Bryant, Dr. Rene LaFreniere, Knut Borkenhagen

Dr. Neil MacDonald *Dr. Eduardo Bruera* *Dr. John Jensen*

Pain control

In Edmonton at the Cross Cancer Institute, the Palliative Care Group includes Drs. Neil MacDonald and Eduardo Bruera of the Cross Cancer Institute and Dr. John Jensen, an oncologist from the Misericordia Hospital, Mrs. Karen MacMillan, a research nurse, and Mrs. Betty Profitt, a nurse practitioner.

"The Cross Cancer Institute was probably the first institution in the country to include a formal pain and symptom control group, as part of a medical oncology program," says Dr. MacDonald. "The whole thrust of our work is to develop techniques for pain control and other symptom control to enable patients to remain at home."

Dr. MacDonald says the majority of women with advanced breast cancer experience pain, although the severity of the pain varies considerably. "Through the combined efforts of the Palliative Care Group and the Edmonton Home Care Palliative Care Program," adds Dr. MacDonald, "many cancer patients are able to stay in their home. With the availability of portable infusion pumps, for example, patients can receive chemotherapy and pain relieving drugs at home."

Women with advanced breast cancer may also suffer from malnutrition and weakness, and Dr. Bruera is finding evidence suggesting this weakness is not nutritional but due to the presence of cancer in muscle tissue.

"I am grateful to be alive. It is like a death sentence commuted. I consider myself terribly, terribly lucky today and I know I am a lot happier than I have ever been. You tell me why. I think I have finally learned the value of being alive.

"I talked to Jan Scott from the Psychosocial Department. She helped me through a lot of really crummy periods. She has been a tremendous help. I ran to her every time I had a problem and she would help me sort it out, but I also did a lot of reading. I read lots and lots of books.

"My son is a teenager, and let me tell you, I have spent a lot of time thinking about what I have done, what I didn't do and what I should have done as a parent. Jan Scott seems to think he is a well-adjusted, normal teenager and I think he is too. He doesn't smoke, drink or do drugs. He is emotionally and socially healthy, intelligent, kind and considerate. His marks in school are in the 70s and 80s and he has a great interest in computer animation. So far so good! He went through some pretty sad times. My illness caused him to mature sooner.

"It is sort of a journey. I don't think it is ended here. When I was really ill, there were so many people gathered all around me. As I started to get better, they would talk about their everyday problems and I would say to them,

Jan Scott, Emilia Di Blasio

'If you could have been in my shoes for one day, when I couldn't breathe and all my dreams were dying and I was going to lose my son, then you would realize how trivial your problems really are.'

"I finally realized that most people don't really learn from someone else's experiences. You have to live it yourself. We hear all those clichés. 'Live today like it's the only day you've got.' 'If you've got your health, you've got everything.' We hear all this stuff but it doesn't sink in."

Emilia Di Blasio, breast cancer patient, Tom Baker Cancer Centre

"I wanted to protect everyone around me. I didn't want them to know how scared I was. All of a sudden you realize you are mortal and that everything is changing. I knew I would never be young again.

"The sexual part was not the difficult part. What worries me is having a recurrence. My first reaction was, 'God, my breasts.' But breasts are no big deal. I am not diminished as a woman. In a lot of ways losing a breast enhanced my life. It made me more honest and open about a lot of things, certainly about things pertaining to my body.

"Right after I had surgery I went to see a plastic surgeon because I was immediately going to go for reconstruction. Immediately. Two or three days after surgery, someone from Reach to Recovery comes to see you and they bring you this little thing to put in your bra when you leave the hospital. So you have got something.

"When you remove weight from the side of somebody's body, you leave them unbalanced. I have always been an avid raquetball player and when I went back to play raquetball six weeks after surgery, I was really annoyed because I couldn't maintain my balance. So for my 44th birthday in June, not quite two months after surgery, I bought my prosthetic. That was my birthday present to myself. I was still thinking that ultimately I would have surgery done, but I simply found the prosthetic very comfortable and just don't feel the need for reconstruction."

Marg Pulleiny, breast cancer patient, Cross Cancer Institute

Says Dr. MacDonald, "Weakness is a mysterious area. We're conducting studies to try and get inside this 'black box' so we can introduce effective treatments to improve patient strength and mobility."

Reach to recovery

For women who have mastectomies, quality of life is diminished, and psychologists and social workers at the Tom Baker Cancer Centre and the Cross Cancer Institute work to help women and their partners adjust to the difficulties of living with the disfiguring aspects of mastectomy.

At breast clinics, Reach to Recovery volunteers offer information and support. The Reach to Recovery display table contains information about what is available to women who have had a mastectomy. Reach to Recovery is a Canadian Cancer Society program. All the volunteers are former breast cancer patients. Most have been Alberta Cancer Board patients. One of the founders of the program was Pat Webber, a breast cancer patient who for many years was an active volunteer with the Tom Baker Cancer Centre.

Reaching out to families

Through their psychology and psychosocial departments, Alberta Cancer Board clinics can reach out to the families of breast cancer patients. "One of our goals is to reach the husband," says Dr. John Robinson, a psychologist with the Tom Baker Cancer Centre. "When the husband comes to the clinic, it is easy for the physician, nurse, dietician or psychosocial professional to gather around the patient and exclude the husband.

Reach to Recovery volunteers are available during weekly breast clinics.

Dr. John Robinson, Dr. Peter Joy

"They can get the feeling we are not as interested or concerned about their experience. But this can be as difficult a time for him as for his wife, although that's not often recognized by the wife, husband or rest of the family."

In the past, the Tom Baker Cancer Centre has offered support groups for couples suffering from breast cancer. "A lot of women have questions about reconstruction and the husbands have questions too. A woman may wonder, 'Will I be more attractive to him if I have reconstructed breasts?' Those issues get talked through. There are questions like, 'Will reconstruction look like a natural breast? What is the sensation like? And issues of sexuality often get discussed."

Dr. Robinson says despite couples' fears, they can have happy, healthy sex lives after a mastectomy. "I don't think anybody would say, 'I'm glad I had this experience and I wouldn't have missed it for the world.' But often as a result of breast cancer, of losing a breast or some other experience, people become more aware of

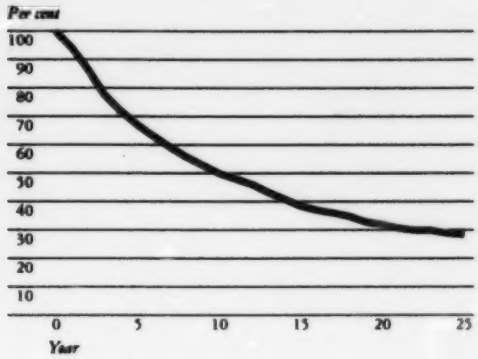
Dr. Barry Bultz

what is really important in a relationship, and their relationship afterwards tends to be much richer."

Dr. Barry Bultz, director of the Department of Psychosocial Resources at the Tom Baker, says, "We are now embarking on a number of groups, not only for breast cancer patients, but for cancer patients in general, as well as for children whose parents have cancer." Dr. Bultz explains that living with a mother who has cancer can have profound and long-lasting effects on children—effects we are not completely aware of yet.

"We have also run support groups for single women," adds Dr. Bultz. "For these women, there is a whole list of other issues—the issues of identity, loneliness, socializing again."

Figure 3
SURVIVAL CURVE FOR BREAST CANCER IN ALBERTA
After 10 years, 50 per cent of all women with breast cancer were still alive, while close to 30 per cent were still alive 25 years later.



The Alberta Cancer Board

The Alberta Cancer Board was established in 1968 with the passage of the Cancer Treatment and Prevention Act. Until then, cancer services had fallen under the general mandate of Alberta Health. As the frequency of all cancers increased, and cancer medicine or oncology became more and more advanced and specialized, the Government of Alberta recognized the importance of passing a Cancer Act and establishing an independent Board to assume responsibility for cancer care across the province.

On the recommendation of Cabinet, the Minister of Health appoints private citizens for three-year terms to the Board of Directors. The Board reports back to the Minister through the Board Chairman. A president is appointed to oversee its operations.

The Alberta Cancer Board offers programs in both northern and southern Alberta. The Northern Alberta Cancer Program is offered through the Cross Cancer Institute in Edmonton and through associated centres and clinics in Grande Prairie, Peace River, Fort McMurray and Red Deer. The Southern Alberta Cancer Program is offered through the Tom Baker Cancer Centre in Calgary and through clinics in Lethbridge and Medicine Hat.

The Government of Alberta funds the Alberta Cancer Board, basing its annual funding on government fiscal policies and on Alberta Cancer Board budgets submitted annually. The Alberta Cancer Board also receives support for research and education from the Alberta Heritage Savings Trust Fund, Alberta Heritage Foundation for Medical Research, the Universities of Alberta and Calgary, industry, and national and international research granting agencies.

The Board generates some revenue from the treatment of out-of-province patients and from other incidentals. The Canadian Cancer Society provides grants for education and patient comfort, while corporations, community groups and individuals offer support through the Alberta Cancer Foundation which handles charitable donations to the Board.

The Alberta Cancer Board's mandate is to work to prevent cancer, to engage in research into the cause, nature and control of cancer, to diagnose and treat cancer, and to contribute to cancer education. This includes educating the general public, practising physicians, physicians in training, medical students, as well as students of other health disciplines. Many Alberta Cancer Board oncologists hold teaching positions at the University of Alberta and the University of Calgary, and therefore actively contribute to educating future nurses and physicians in the care of cancer.

Cancer Prevention and Control

The Division of Epidemiology and Preventive Oncology is committed to playing a prominent role in cancer prevention and control in Alberta, through research and translating research results into a practical format for daily use.

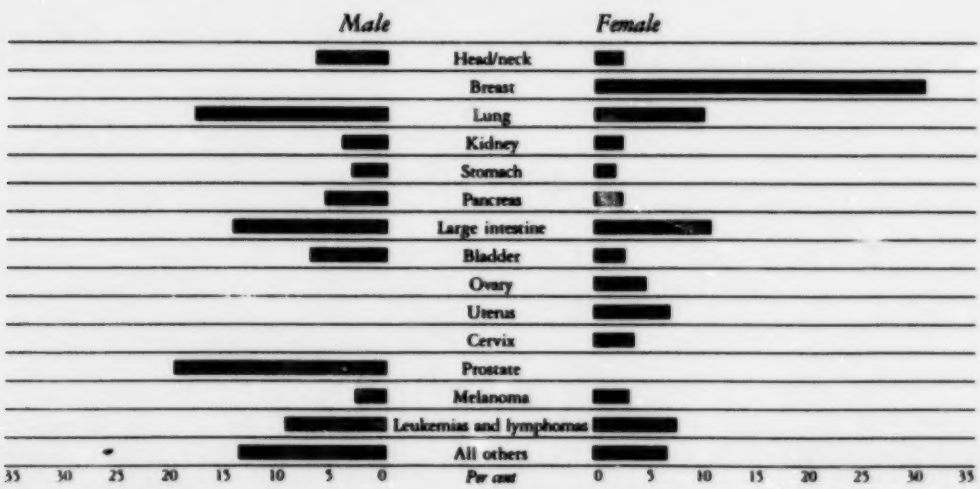
The Steve Fonyo Cancer Prevention Program (SFCPP), initiated in 1986, came into its third and final year during this fiscal year and will be completed in 1989. Obviously, the program's impact on cancer incidence is still unknown, but SFCPP has created interest in cancer prevention in the participating communities. Along with its major prevention program, SFCPP, the Board plans to develop new programs and other approaches, including secondary prevention or early detection programs.

The Division's research program is directed at occupational cancer and hormone-related cancers (breast and ovary). The Division is currently involved in a study to

PER CENT DISTRIBUTION OF CANCERS BY SITE, ALBERTA, 1988
(excluding non-melanoma skin cancers and in-situ tumors)

In 1988, almost 10,000 patients in Alberta (one out of every 250 Albertans) were diagnosed with cancer. About three-quarters (75 per cent) of all cancer tumors are found in patients 55 and older. Twenty-five per cent are diagnosed in persons 75 years or older.

In the figure, the relative frequency of the various sites in males and females is shown. The most frequent cancers in Alberta are (non-melanoma) skin tumors: one out of every four (25 per cent) of all tumors registered belongs in this category. Fortunately, this type of tumor is usually easy to treat and very rarely the cause of death. When these tumors are excluded, the most frequent tumor in males is cancer of the prostate, followed by cancer of the lung and the large intestine. In females, cancer of the breast is by far the most common malignant tumor, followed by cancer of the large intestine and cancer of the lung.



assess the effect of betacarotene on the prevention of skin cancer and participating in a number of collaborative studies with other epidemiology units in other provinces.

The Alberta Cancer Registry is a data base where information on all cancer patients in the province is stored. It is an indispensable source of knowledge for clinical and epidemiological research, as well as for planning and prevention activities. In 1988, approximately 200 requests were received for data from the registry. The requests vary from the simple question, "How many cancers were diagnosed in 1985?" to extensive studies like the analysis of the survival of the different types of breast cancer over the last 25 years.

The registry is considered one of the finest in Canada. An interesting development is the establishment of a National Canadian Cancer Registry in which all provincial registries will participate. Some cancer statistics based on data collected this year in the cancer registry data base are presented on page 32.

Research Programs

The Research Administration office is responsible for the day-to-day administration of research programs and committees: the Research Policy Committee, the Research Funding Committee and the Advisory Committee on Research (ACOR).

Each committee has unique roles and responsibilities. The Research Policy Committee, a sub-committee of the Alberta Cancer Board consisting entirely of members of the Board, takes responsibility for research policy issues.

The Research Funding Committee, a team of scientists, representing the medical and scientific community, the cancer centres and the Board, reviews research proposals and projects submitted to the Alberta Cancer Foundation. The Committee advises the President and the Foundation as to the merit of each project and proposal.

In November 1986, the Board established the Advisory Committee on Research (ACOR). Consisting of seven international experts in oncology, ACOR advises the Board on the awarding of Alberta Heritage Savings Trust Fund-Applied Research Cancer (AHSTF-ARC) grants. ACOR evaluates proposals, initiates research policy and reviews how funds are distributed.

Other committees include the Cross Cancer Institute's Research Assessment Committee and the Tom Baker Cancer Centre's Research Advisory Committee and the Conjoint Ethics Committee which ensure research protocols are scientifically and ethically sound.

Advisory Committee on Research (ACOR)

Chairman

Dr. Michael Baker
Director, Oncology Programme
Toronto General Hospital

Members

Dr. Allen Eaves
Director, Terry Fox Lab
Cancer Control Agency of B.C.
Vancouver

Dr. Arnie Greenberg
Professor, Manitoba Institute of Cell Biology
Winnipeg

Dr. Theodore Phillips
Chairman, Department of Radiation Oncology
University of California
San Francisco

Dr. Joseph Shuster
Director, Clinical Immunology
Montreal General Hospital

Dr. James Till
Senior Scientist, Division of Biological Research
Ontario Cancer Institute
Toronto

Dr. Jerome Yates
Associate Director, Clinical Affairs
Roswell Park Memorial Institute
Buffalo, New York

Scientific Officer

Dr. Hans van de Sande
Director, Department of Medical Biochemistry
University of Calgary

Facts about the Alberta Cancer Board 1988-89

Number of new cancer patients in Alberta in 1988
- 9,736

Alberta Cancer Board operating budget
- $45,941,047

Sources of operational funding
- Government of Alberta, Department of Health
- Discretionary Revenue

Staff (all clinics) 959 (total)

• Medical staff	44 (full-time)	3 (part-time)
• Nursing staff	84 (full-time)	119 (part-time)
• Scientific staff	35 (full-time)	
• Technical staff	137 (full-time)	41 (part-time)
• Professional and support staff	354 (full-time)	142 (part-time)

Physicians with active or consulting privileges
- 276 (Cross Cancer Institute)
- 173 (Tom Baker Cancer Centre)

Students (undergraduate and graduate students completing medical training at the cancer centres)
- 10 (Cross Cancer Institute and Tom Baker Cancer Centre)

Volunteers
- 450 (Cross Cancer Institute)
- 180 (Tom Baker Cancer Centre)

Specialty care areas
- Gynecological Oncology
- Medical Oncology
- Nuclear Medicine
- Oncological Pathology
- Pediatric Oncology
- Radiation Oncology
- Radiology
- Surgical Oncology
- Psychosocial Oncology
- Pain and Symptom Control

Inpatient beds
- 76 (Cross Cancer Institute)
- 45 (Administered by the Foothills Hospital for the Tom Baker Cancer Centre)

Outpatient visits
- 77,516 (Cross Cancer Institute and affiliated clinics)
- 74,128 (Tom Baker Cancer Centre and affiliated clinics)

Research projects
- 95 (administered by the Alberta Cancer Board)
- 148 (ongoing protocols requiring monitoring and annual ethics approval by the Alberta Cancer Board)

Research budget
- $5,129,345

Sources of research funding
- Alberta Cancer Board
- Alberta Cancer Foundation
- Alberta Heritage Foundation for Medical Research
- Alberta Heritage Savings Trust Fund
- Government of Alberta
- Health and Welfare Canada
- Industry
- Medical Research Council
- M.S.I. Foundation
- National Cancer Institute of Canada
- National Cancer Institute (USA)
- National Institutes of Health (NCI-U5)
- University of Alberta
- University of Calgary

Alberta Cancer Board
Balance Sheet

As at March 31, 1989

Assets	1988/89	1987/88
Current assets:		
Cash	$ 1,584,978	$ 426,955
Short-term deposits	9,409,219	7,183,555
Accounts receivable	1,483,640	2,795,318
Inventory, at cost	1,369,100	1,323,233
Prepaid expenses	149,291	171,716
	13,996,228	11,900,777
Funds held in trust by Alberta Cancer Foundation	3,549,031	3,549,031
Fixed assets, at cost:		
Furniture and equipment	16,856,554	17,079,299
Research assets	5,457,055	5,423,158
Improvements to buildings and leaseholds	3,240,645	3,199,028
Construction in progress	5,351,229	897,770
	30,905,483	26,599,255
	$48,450,742	$42,049,063

Liabilities and Equity		
Current liabilities:		
Accounts payable	$ 4,705,507	$ 4,651,963
Research projects grants payable	1,359,541	1,449,767
Deferred capital grants	1,365,435	181,709
Accrued vacation pay	1,921,712	—
	9,352,195	6,283,439
Equity:		
Equity balances	4,644,033	5,617,338
Funds entrusted to Alberta Cancer Foundation	3,549,031	3,549,031
Equity in fixed assets	30,905,483	26,599,255
	39,098,547	35,765,624
	$48,450,742	$42,049,063

This information has been extracted from the audited financial statements of the Alberta Cancer Board.

A copy of the complete audited financial statements is available upon request.

Alberta Cancer Board
Statement of Revenue, Expenditure and Equity Balances
For the year ended March 31, 1989

Revenue:	
Grants	
Patient charges	
Interest	
Donations and proceeds on disposition of research assets	
Other	
Ancillary operations:	
Edmonton Radiopharmaceutical Centre	
Parking	
Coffee Shop and Gift Shop	
Expenditure:	
General	
Research	
Acquisition of fixed assets	
Construction in progress	
Ancillary operations:	
Edmonton Radiopharmaceutical Centre	
Parking	
Coffee Shop and Gift Shop:	
Expenses	
Transfer to Cross Cancer Institute Volunteer Association	
Excess (deficiency) of revenue over expenditure for the year	
Equity balances at beginning of year	
Adjustment for accrued vacation pay	
Transfer of contributed equity	
Equity balances at end of year	

This information has been extracted from the audited financial statements of the Alberta Cancer Board.

A copy of the complete audited financial statements is available upon request.

Operating	Discretionary	Capital	Alberta Heritage Research Projects	Endowment and Trust	Total 1988/89	Total 1987/88
$45,042,992	$ —	$5,568,142	$2,396,509	$ —	$53,007,643	$46,785,843
1,295,500	17,439	—	—	—	1,312,939	1,284,165
—	1,020,472	—	39,314	22,217	1,082,003	719,365
—	—	413,521	—	1,516	415,037	705,243
281,316	—	—	—	—	281,316	334,734
—	876,766	—	—	—	876,766	746,537
—	157,747	—	—	—	157,747	149,536
—	216,822	—	—	—	216,822	235,172
46,619,808	2,289,246	5,981,663	2,435,823	23,733	57,350,273	50,960,595
46,991,795	110,931	—	—	—	47,102,726	42,611,379
—	—	—	2,384,823	15,897	2,400,720	2,059,326
—	65,216	1,304,987	51,000	—	1,421,203	2,927,921
—	—	4,453,459	—	—	4,453,459	897,770
—	747,399	—	—	—	747,399	659,314
—	59,537	—	—	—	59,537	52,865
—	185,395	—	—	—	185,395	197,155
—	31,427	—	—	—	31,427	38,017
46,991,795	1,199,905	5,758,446	2,435,823	15,897	56,401,866	49,443,747
(371,987)	1,089,341	223,217	—	7,836	948,407	1,516,848
1,856,533	3,456,106	—	—	304,699	5,617,338	3,649,490
(1,921,712)	—	—	—	—	(1,921,712)	—
—	—	—	—	—	—	451,000
$ (437,166)	$4,545,447	$ 223,217	$ —	$312,535	$ 4,644,033	$ 5,617,338

Alberta Cancer Foundation

In September 1984, with an amendment to the Cancer Programs Act, the Legislative Assembly established the Alberta Cancer Foundation to handle charitable donations on behalf of the Alberta Cancer Board and its clinics—the Cross Cancer Institute in Edmonton, the Central Alberta Cancer Centre in Red Deer, the Grande Prairie Cancer Centre, the Peace River and Fort McMurray Cancer Clinics, the Tom Baker Cancer Centre in Calgary, the Lethbridge Cancer Clinic, and the Medicine Hat Cancer Clinic. Donations to the Foundation improve patients' quality of life, support educational and research programs and enhance diagnosis and treatment through the purchase of medical equipment.

Donations are tax-deductible, subject to the prevailing regulations of Revenue Canada. Every effort is made to ensure that donations are used for the purpose directed by the donor. Donations can also go towards a general fund which is made available for research, education and treatment. Final approval is the responsibility of Trustees of the Alberta Cancer Foundation.

Board of Trustees

Chairman
Mr. T.E. (Ed) Poppitt

Members
Mr. Arthur D. Davis
Mr. V. Glenn Sundstrom
Mr. E.W.B. (Bert) Adamson
Mr. Herb Imler
(Canadian Cancer Society
Representative)

Executive Secretary
Dr. Jean-Michel Turc

Alberta Cancer Foundation
6th Floor, 9707-110 Street
Edmonton, Alberta T6K 2L9
(403) 482-9380

Chairman's Report

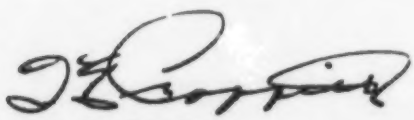
The Alberta Cancer Foundation offers private individuals and companies an opportunity to contribute towards cancer research, education, patient comfort and hospital equipment. Through the Foundation, Albertans directly touch the lives of cancer patients, their friends and families.

The Foundation has now completed its fourth year. As Chairman of the Foundation, I am continually overwhelmed by the generosity and concern of Albertans. The Foundation receives donations of cash ranging from a few dollars to more than $250,000. Generous and appreciative individuals have purchased state-of-the-art medical equipment and made donations towards research.

This year, I was particularly overwhelmed by the response to Project Alpha, a major drive to raise $3 million for a floor dedicated entirely to cancer research. The campaign was co-chaired by two very capable and hard-working Calgarians: Bob Dixon, Project Alpha chairman, and Al Markin, co-chairman. Their teamwork led to the success of the campaign.

Albertans responded immediately. The energy sector contributed significantly, while private citizens, particularly rural Albertans, reached into their pockets and gave generously.

Project Alpha has been more of a success than we dreamed possible. We surpassed our goal! The Southern Alberta Cancer Research Centre will soon be a reality. The Centre will mean the efforts of cancer researchers will continue and increase, improving diagnosis, treatment and cure rates of cancer.

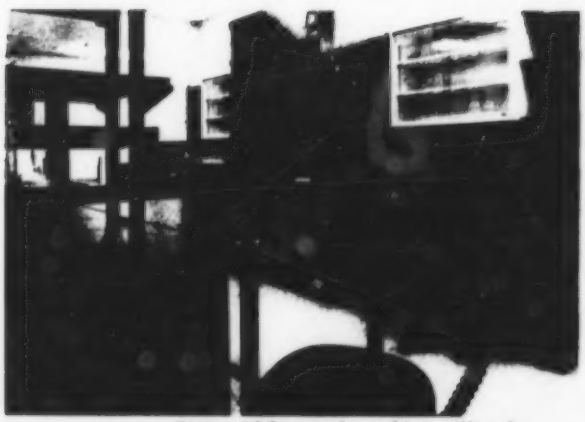


T.E. (Ed) Poppitt
Chairman
Alberta Cancer Foundation

Project Alpha

Albertans have committed over $2.8 million to Project Alpha, a drive to raise private funds for the Southern Alberta Cancer Research Centre. The Research Centre will occupy an entire floor in the new Heritage Foundation for Medical Research building on the Foothills medical site in Calgary.

The Government of Alberta contributed an additional $1.6 million towards Project Alpha. Ongoing donations are still being received. These donations are going towards the construction and purchase of specialized equipment for the research floor.



Project Alpha raised over $2.8 million for cancer research.

Project Alpha donors to March 31, 1989:

Mr. Fred Abbott
Mr. E.W.B. Adamson
Adeco Drilling and Engineering Co. Ltd.
AGAT Laboratories Staff and Management
Alberta Energy Company Ltd.
Alberta Gas Chemicals Ltd.
Alberta Government Telephones
Alberta Natural Gas Company Ltd.
Alberta Wheat Pool
Alpine Drywall (Calgary) Ltd.
Altex Resources Ltd.
Amoco Canada Petroleum Company Ltd.
Anadarko Petroleum of Canada Ltd.
Argo Sales Ltd.
Ken & Lynda Arnold
Arthur Anderson & Company
Atco Drilling, Division of ATCO Enterprises Ltd.
Atkinson McMahon (Staff)
Autostar Imports Inc.
Badger Drilling Ltd.
Mr. J. Allen Baker
Ballem, McDill, MacInnes & Eden
Bank of America Canada
Bank of Montreal
Bank of Nova Scotia
Beaudril (1987) Limited Partnership
Beaver Drilling Ltd.
Bennett & Jones Barristers & Solicitors
Bennett Jones (Staff)
BJ-Titan Services (Canada) Ltd.
Black & Company Partners
Blier Inc.
Bluebird Drilling
Bow Valley Industries Ltd.
Byron J. Seaman, Daryl K. Seaman, Donald R. Seaman
BP Canada Inc.
Braun Foundation
Belco Drilling Ltd.
Omar J. Broughton
Bruce Farms Ltd.
Mr. George W. Bull
BURNCO Industries Ltd.
Burnet, Duckworth & Palmer
James F. Burns Sr.

C-I-L Inc.
Cactus Drilling
Calgary Co-operative Association Limited
Cambridge Shopping Centres Limited
Mrs. Elizabeth Campbell
Can-Tex Drilling & Exploration Ltd.
Canada Northwest Energy Ltd.
Canada Trust
Canadian Airlines International Ltd.
Canadian Fertilizers Limited
Canadian Hunter
Canadian Imperial Bank of Commerce
Canadian Occidental Petroleum Ltd.
Canadian Pacific Limited
Canadian Perforators Ltd.
Canadian Western Natural Gas
Cancarb Limited
CanPet Marketing Ltd.
Carma Developers Ltd.
Carma Developers Ltd.
Mr. Clayton Carroll
Casca Resources Ltd.
Celanese Canada Inc.
Century Coals Ltd.
Challenger International Services Ltd.
Chase Drilling Ltd.
Chauvco Resources Ltd.
Chevron Canada Resources
Mr. Gordon Christensen
Ms. Jeannie Christensen
Mrs. Virgie Christensen
Cimarron Petroleum Ltd.
Gordon Clarkson
Clearview Hutterian Brethren
CN Exploration Inc.
Code Hunter
Code Hunter - Partners
Cobos Exemy Partnership (The)
Coles Gilbert Associates Ltd.
Complex Resources International Ltd.
Cominco Fertilizers (A Division of Cominco Ltd.)
Computalog Ltd.
Contact Drilling Canada Ltd.
Cooperative Energy Development Corp.
Coscan Development Corporation
Cummins Alberta
D & S Petroleum Consulting Group Ltd.
Danny Dalla-Longa
Mr. Arthur D. Davis
Deloitte Haskins & Sells
Delta Projects
Jack Diskin
Divinesh Separators Ltd.
Mr. & Mrs. R.K. Dixon
Sydney K. Dixon
Lee Dobrescu
Dominion Oilfields Supply Company Ltd.
Double Eagle Drilling Ltd.
Dow Chemical Canada Inc.
Drillsafe Supervision Ltd.
Mr. Brian P. Drummond
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Duncan Collins Partners
Dumwoody & Company
Eaton Yale Ltd.
Mr. Gordon A. Elliott
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Esso Resources Canada Ltd.
Carolyn R. Ewens
Fenerty, Robertson, Fraser & Hatch
Financial Trustco Properties
First Marathon Securities Ltd.
Flint Engineering & Construction
Mr. & Mrs. Neil Fluker
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Franklin Supply Company Ltd.
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Garnett Drilling Corporation
Genstar Development Company
GEOTECHnical Resources Ltd.
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Goodyear Canada Inc., Medicine Hat Plant
Gordans Farms Ltd.
Mr. David Groenveld
Gulf Canada Resources Ltd.
H. Kenda Agencies Ltd.
Haines Elliott Marketing Services Inc.
Mr. Norman Haines
Halliburton Services Limited
Roy Hamilton
Harvard International Resources Ltd.
Mr. Victor N. Heaver
Elizabeth J. Heitman
Heitman/Stampede Breakfast Proceeds
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High-Line Drilling International
Hiplains Drilling
Mr. & Mrs. E. Hodgson
Thomas R. Holland

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Hutterian Brethren
Church of Springvale
Hycarb Engineering Ltd.
Mr. Robert Hymas
Imperial Oil Limited
Inter-City Gas Corporation
Independent Porcelain Co. Ltd.
Industrial Waterproof Systems
IPSCO Inc.
Irving Industries Ltd.
IXL Industries Ltd.
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Dr. L.M. Jerry
Jet Perforators Inc.
Les Johannesen
Jomax Drilling Ltd.
JonDor Realty Ltd.
JR Howie Fertilizer Ltd.
Kenting Drilling Co. Ltd.
Kettenbach Farms
Key Oilfield Supply & Rentals Ltd.
A.D. Kingsford
Kiwanis Club of Medicine Hat
KPMG Peat Marwick Thorne
In Memory of Mr. D.F. Lockie
KPMG Peat Marwick Thorne Partners
Brian M. Krausert
Lacana Petroleum Limited
Lasmo Canada Inc.
Laurentian Group of Companies
Hans V. & Ida Lauridsen
Gordon W. Lausen
John Lawrence
Nigel Lawrence
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National Oilwell Canada Ltd.
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North Canadian Oils Limited
North Eastern Drilling Ltd.
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Poco Petroleums Ltd.
Florence and Ed Poppitt
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Precision Motors
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Price Waterhouse
Procor Limited

ProGas Ltd.
Prudential Bache Securities
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Thorne Ernest & Whinney
Tintagel Energy Corporation
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TransCanada PipeLines
Travis Chemicals Inc.
Tremco Ltd.
Trimac Limited
Dr. Jean-Michel Turc
Mr. W.H. Tye
Mr. & Mrs. John Tyrrell
Ultramar Oil & Gas Canada Ltd.
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Winterhawk Petroleum Consulting Services Ltd.
Wintershall Oil of Canada Ltd.
Estate of Marie Wirth
Mr. & Mrs. K. Wise

Meeting the Challenge

Emilia Di Blasio, featured in this 1988-89 annual report, has lived with breast cancer for more than 10 years. A combination of surgery, radiotherapy and chemotherapy has kept Emilia alive and active. Other support offered through nursing staff and staff psychologists helped her cope with the disease and its setbacks.

Breast cancer is the most common form of cancer in women. The challenge is to increase public awareness, to improve our medical understanding of the disease and to improve methods of diagnosis and treatment. The Alberta Cancer Foundation, which relies on donations from private citizens and corporations, is meeting this challenge.

It is supporting public education programs, such as public lecture series, conferences and workshops, and providing patients with educational materials, including pamphlets, library books and periodicals.

It is providing funding for research projects, fellowships and research scientists and continued support for the Palliative Care Chair at the University of Alberta. It is purchasing video equipment, artwork, portable drug infusion pumps and other 'extras' that improve patient comfort. It purchases medical equipment, including ultrasound equipment, a bone marrow storage unit, electronic thermometer and intravenous pump.

Volunteer Marguerite Ganderton in Zonta Lounge. The Cross Cancer Institute Lounge is furnished through charitable donations.

Emilia Di Blasio

Thank you, Donors

The Alberta Cancer Foundation is grateful to all Albertans and others who support the work we do. Listed below are donors who gave $1000 or more during 1988-89.

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W.S. Armstrong Professional Corporation
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Mr. Leo D. Ciccone
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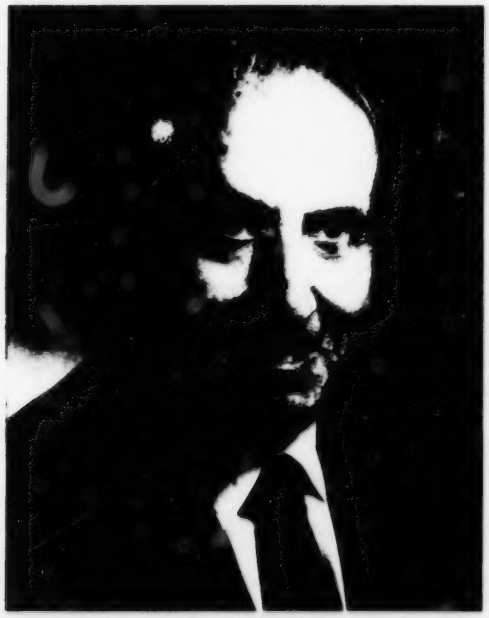
The Dr. Herbert Meltzer Memorial Fund

The Dr. Herbert Meltzer Memorial Fund has helped to fund a research project which will may improve the cure rate of breast cancer. The fund was established by the family, friends and associates of Dr. Herbert Meltzer, a physician and thoracic surgeon who was a pioneer in the campaign against smoking. Administered by the Alberta Cancer Foundation, the fund supports the Cross Cancer Institute's Molecular Genetics and Carcinogenesis Research Unit, which has recently been studying breast cancer.

A research team led by Drs. Malcolm Paterson, Alan Lees and Sandy Paterson of the Cross Cancer Institute has shown that 'genetic markers' may help oncologists with the diagnosis of breast cancer. Results of the study may help oncologists determine when localized breast cancer is a more serious form of cancer likely to recur after treatment.



Dr. Herbert Meltzer

City of Edmonton employees

City of Edmonton employees, through the Civic Service Union #52, have donated $30,000 to the Alberta Cancer Foundation. The union represents employees throughout the City, including pool cashiers and 'edmonton telephones,' Environmental Services (Water and Sanitation), Finance Department and Library employees. The donation, made through the Union's Employee Charitable Assistance Fund, has allowed the Cross Cancer Institute to purchase a state-of-the-art carbon dioxide laser. Laser surgery has a special role to play in cancer treatment. It can be used to reduce the pain of advanced breast cancer, where painful masses of cancer lie under the skin.

City employees

Portable infusion pumps

The Alberta Cancer Foundation and Knoll Pharmaceuticals of Canada are co-sponsoring research by Dr. Eduardo Bruera to improve portable infusion pumps. The pumps allow patients to receive medication and chemotherapy without being hospitalized. Patients can stay with their families in their own homes. Many can continue to work.

Many users of portable infusion pumps, however, are bothered by irritation at the needle site. Dr. Bruera of Cross Cancer Institute is studying whether or not the incidence of irritation relates to the concentration of the drug being administered.

Dr. Eduardo Bruera with infusion pump

Caring for children with cancer

The Tom Baker Cancer Centre's Pediatric Oncology Program recently acquired special monitoring equipment, thanks to a $10,000 donation from Moffat Communications of Calgary. The equipment electronically records a patient's temperature and monitors blood pressure, making it easier to care for children visiting the Tom Baker Cancer Centre's outpatient clinics.

Operating room equipment

Donations to the Alberta Cancer Foundation have also allowed the Tom Baker Cancer Centre to purchase two operating room telescopes and an operating room oximeter. The 30 and 70 degree telescopes allow operating room physicians to view the bladder from different angles.

The oximeter, clipped to the patient's earlobe or finger, can automatically record a patient's pulse rate and blood oxygen level.

Out-patient clinic at the Tom Baker Cancer Centre Pediatric Oncology Program

Alberta Cancer Foundation
Statement of Operations and Fund Balances

For the year ended March 31, 1989

	Restricted Funds	Unrestricted Fund	Endowment Fund	Total 1988/89	Total 1987/88
Revenue:					
Donations	$1,284,301	$ 751,779	$ —	$2,036,080	$ 704,519
Interest	40,866	493,727	—	534,593	374,264
	1,325,167	1,245,506	—	2,570,673	1,078,783
Expenditure:					
Charitable projects	1,372,623	—	—	1,372,623	179,907
Fund raising costs, Project Alpha	116,011	—	—	116,011	54,142
Education and travel	—	280,097	—	280,097	284,547
Equipment	—	130,453	—	130,453	102,392
Administration	—	107,360	—	107,360	93,465
Research projects	—	97,378	—	97,378	125,229
Public awareness	—	41,177	—	41,177	41,894
	1,488,634	656,465	—	2,145,099	881,576
Surplus (deficit) for the year	(163,467)	589,041	—	425,574	197,207
Fund balances at beginning of year	193,949	702,443	354,900	1,251,292	1,054,085
Transfers between funds	66,975	(244,425)	177,450	—	—
Fund balances at end of year	$ 97,457	$1,047,059	$532,350	$1,676,866	$1,251,292

Balance Sheet

As at March 31, 1989

Assets	1988/89	1987/88
Cash	$ 417,720	$ 846,977
Short-term deposits	4,575,000	4,300,000
Due from Alberta Cancer Board	124,337	—
Accrued interest	2,397	4,254
Accounts receivable	1,462	6,367
Research project advances	116,771	5,636
	$5,237,687	$5,163,234

Liabilities and Fund Balances		
Accounts payable	$ 11,790	$ —
Due to the Alberta Cancer Board	—	362,911
Restricted funds	97,457	193,949
Unrestricted fund	1,047,059	702,443
Endowment fund	532,350	354,900
Trust fund	3,549,031	3,549,031
	$5,237,687	$5,163,234

This information has been extracted from the audited financial statements of the Alberta Cancer Foundation.

For further information, please contact:

Alberta Cancer Board
Director, Communications

Alberta Cancer Foundation
Director, Development

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Edmonton, Alberta T5K 2L9
(403) 482-9300

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